

Trend Study 1-4-01

Study site name: Chokecherry Springs.

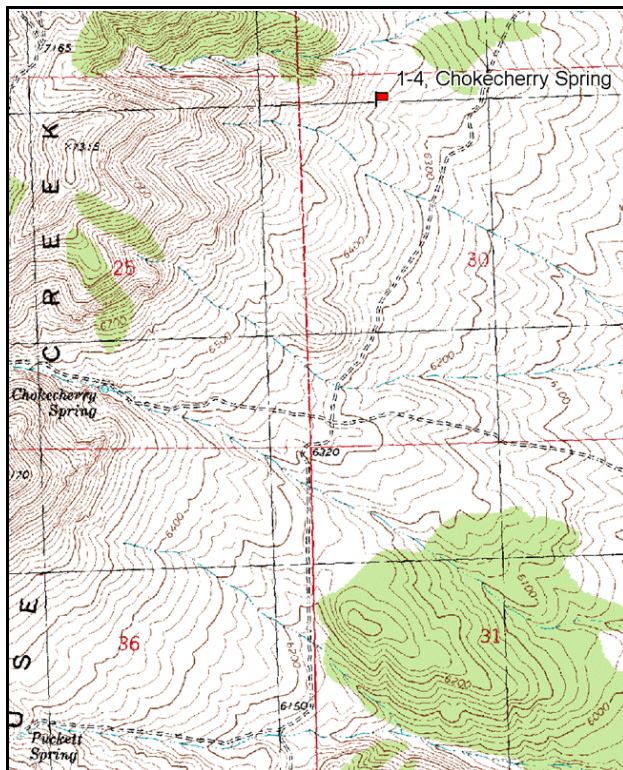
Vegetation type: Mountain Brush.

Compass bearing: frequency baseline 345 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (71ft), line 4 (59ft).

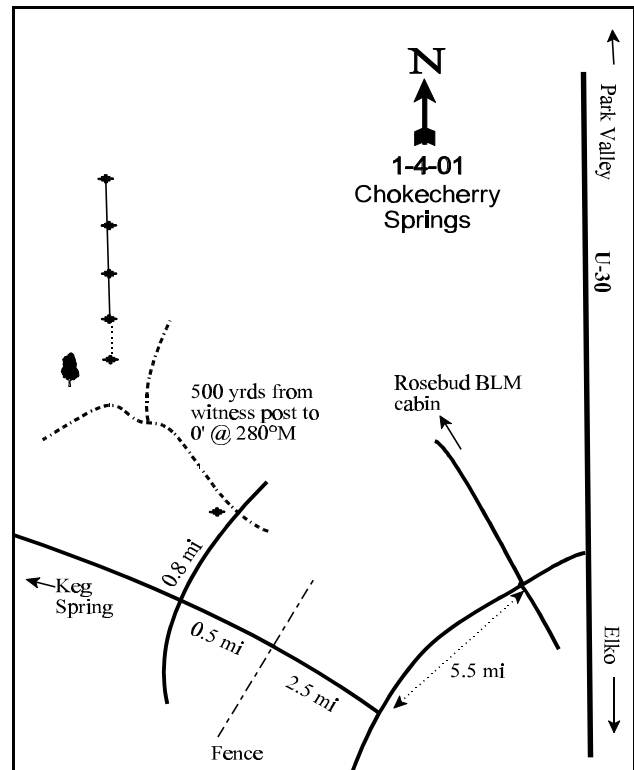
LOCATION DESCRIPTION

Proceed from U-30 towards the Rosebud BLM field station. Bear left at the fork to the BLM station. Travel 2.1 miles to canal and intersection with a sign designating Emigrant Pass Road. Proceed southwest on Emigrant Pass Road 5.5 miles to a fork. Turn right and travel 2.5 miles to a gate. Pass through the gate and proceed 0.5 miles and turn right at a four-way junction. Travel 0.8 miles to a witness post on left side of road and stop. From the witness post, take a bearing of 276 degrees magnetic to a large juniper, just off the left side of the drainage with several young around it. This juniper is located on the slope above the split in the drainage. Walk about 500 yards from the witness post to the large juniper. From this tree, take a bearing of 9 degrees magnetic and walk 9 paces to the 0-foot stake of the baseline, which is marked with browse tag #7910. The baseline runs at 345 degrees magnetic.



Map Name: Emigrant Pass

Township 10N, Range 16W, Section 30



Diagrammatic Sketch

UTM 4604973 N, 272512 E

DISCUSSION

Trend Study No. 1-4

The Chokecherry Springs study is located approximately one mile northeast of Chokecherry Spring on a moderately gentle (15%) east-southeast facing slope. This area is a mountain big sagebrush-grass type which contains a scattered population of antelope bitterbrush. Elevation (6,400 feet) and exposure both suggest that the area is not "critical" deer winter range. The local conservation officer considers the area "preferred winter range." A pellet group transect read in conjunction with the vegetation transect estimates 36 deer days use/acre (88 deer days use/ha) and 3 cow days use/acre (7 cow days use/ha). Vegetationally and topographically, this site is intermediate between the mountain brush type on steeper, higher slopes and the more gentle alluvial slopes to the east. Immediately below and east of the study area, there are broad ridges occupied by black sagebrush with intervening swales containing mostly basin big sagebrush.

Soil is moderately deep clay loam, but quite rocky, and slightly alkaline (7.7 pH). Effective rooting depth (see methods) is not an apparent problem. Average effective rooting depth was estimated at nearly 16 inches with several measurements over 20". Like the site at Rosebud Hills (#1-3), soil temperature is moderately high, with an average of 60° F at a depth of nearly 17 inches. Surface rock cover is much lower however than site #1-3, with rock and pavement combining to produce almost 10% cover in 2001. The area appears fertile and generally has a good litter cover and organic content. However, phosphorus could be a limiting factor at only 5.9 ppm where values less than 10 ppm can adversely affect some plants development and growth. Vegetative cover from shrubs, to a lesser extent herbaceous plants, are adequate to prevent accelerated erosion. Low to moderate soil movement is occurring by trailing livestock and wildlife. The erosion condition class was determined to be only slight in 2001.

By virtue of its abundance and palatability, mountain big sagebrush is the key browse species, accounting for 51% of estimated browse cover in 2001. The population has been steadily decreasing in density since 1984, by about 15% each time it was sampled. Utilization is mostly light to moderate. Dead plants are fairly numerous at 840 plants/acre in 2001, a dead to live ratio of 1:3. This ratio has been fairly consistent since 1996. A serious threat to big sagebrush as well as most other browse species, is the winter feeding activities of Voles (Microtus spp.). A large number of shrubs in the immediate area showed evidence of complete or near complete girdling damage during the 1984 reading. This appears to have commonly occurred during the severe winters of 1982-84 in many areas. Such damage is especially evident in swales, however, it has also occurred within the study area. Some winter injury was noted on some of the sagebrush in 1996, perhaps caused by the deep snows during the 1992-93 winter. Currently ('01) there are an estimated 540 decadent plants/acre, 19% of which were classified as dying.

Among other shrub species, the most important is a semi-erect layering ecotype of antelope bitterbrush. It made up 20% of the browse cover in 2001. This species showed evidence of relatively intense deer use as well as rodent damage in 1984 and 1990. Current ('01) use is light to moderate. The site could support more bitterbrush than currently occurs. Narrowleaf low rabbitbrush, a known increaser, occurs in moderately high numbers and displays a stable trend.

Perennial grasses occur in rather low numbers with 7 species combining to produce only about 9% cover in 1996 and 2001. Most important is bluebunch wheatgrass followed by subalpine needlegrass, bottlebrush squirrel tail, and Sandberg bluegrass. Almost all of these showed evidence of use by cattle in 1984. Annual cheatgrass is the most abundant grass which accounted for 42% of the grass cover in 1996 and 73% in 2001.

Forb composition is moderately diverse but not highly productive. The most productive forbs on the site include: arrowleaf balsamroot, stoneseed, silvery lupine, tapertip hawksbeard, and longleaf phlox.

1984 APPARENT TREND ASSESSMENT

Soil trend appears stable even though limited erosion is occurring. Animal use is the chief disturbance and most erosion is associated with trampling and effects of trailing. Soil trend could easily decline if intensity of use were to greatly increase. Vegetative trend appears stable to slightly down. The principal factors are a large and vigorous population of narrowleaf low rabbitbrush, serious rodent damage on all species of shrubs and an apparent slow but steady decline in antelope bitterbrush. The latter species maintains itself primarily through vegetative means.

1990 TREND ASSESSMENT

This relatively higher elevation winter range shows the potential for excellent mountain big sagebrush and bitterbrush production. The trend values for these key browse species are down slightly. Both populations have declined in density and show lower numbers of seedlings and young. Utilization of sagebrush is mostly light this year and percent decadence is stable. However, 45% of the decadent plants sampled were classified as dying. Bitterbrush has declined 60% in density and half of the plants sampled in 1990 are decadent. The herbaceous understory is diverse and fairly productive. Five out of the six grasses and twelve out of twenty-one forbs have increased nested and quadrat frequency values.

TREND ASSESSMENT

soil - stable (3)

browse - down slightly (2)

herbaceous understory - slightly up (4)

1996 TREND ASSESSMENT

Ground cover characteristics have improved since 1990. Percent bare ground has declined from 17% to 7% and litter cover has increased from 45% to 55%. Trend for the key browse species, mountain big sagebrush, appears to be stable to slightly down. The population has declined slightly, percent decadence has increased from 21% to 26%, and the proportion of shrubs displaying poor vigor increased slightly (14% to 16%). Trend for antelope bitterbrush is up. However, bitterbrush accounts for only 14% of the shrub cover with an estimated density of 740 plants/acre. The increase in density since 1990 (132 to 740 plants/acre) is likely due to the larger, more representative sample used in 1996. Percent decadency declined from 50% to 0%, with heavy use decreasing from 50% to 3%. Overall, trend for browse is stable. The herbaceous understory displays a slightly upward trend. Sum of nested frequency increased slightly for perennial grasses while nested frequency of forbs remained similar.

TREND ASSESSMENT

soil - up (5)

browse - stable (3)

herbaceous understory - up slightly (4)

2001 TREND ASSESSMENT

Ground cover characteristics have remained similar to 1996. There has been little change in percent bare soil but a slight decrease in litter cover. Trend for soil is stable. Trend for the key browse species, mountain big sagebrush, appears to be slightly down. The population has declined slightly, percent decadence is still fairly high, and young recruitment is poor. There has been a decrease in the sagebrush population of about 15% during each sampling date since 1984. Trend for antelope bitterbrush is slightly up, but it accounts for only about 20% of the shrub cover with an estimated density of 800 plants/acre. Percent decadency of bitterbrush remains low at 5%. Overall, trend for browse is slightly down. The herbaceous understory displays a slightly upward trend. Sum of nested frequency increased slightly for perennial grasses, while frequency for perennial

forbs remained similar. One negative factor is the significant increase in annual cheatgrass. Cover of cheatgrass has increased nearly 4 fold since 1996. It currently accounts for 73% of the grass cover with a cover value of 23%.

TREND ASSESSMENT

soil - stable (3)

browse - slightly down (2)

herbaceous understory - up slightly but dominated by cheatgrass (4)

HERBACEOUS TRENDS --

Herd unit 01 , Study no: 4

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron dasystachyum	a-	a-	ab12	b17	-	-	4	5	.59	.51
G	Agropyron spicatum	ab58	c72	ab50	b52	28	31	24	22	2.91	2.30
G	Bromus tectorum (a)	-	-	a318	b360	-	-	90	98	6.21	23.46
G	Festuca ovina	-	1	5	-	-	1	3	-	.19	-
G	Oryzopsis hymenoides	4	14	11	10	2	7	5	4	.37	.07
G	Poa secunda	a22	ab35	b58	c140	12	18	26	52	.99	3.95
G	Sitanion hystrix	a17	a10	ab30	b41	8	6	14	20	1.18	.81
G	Stipa thurberiana	a-	ab6	c26	bc15	-	4	13	7	2.45	.84
Total for Annual Grasses		0	0	318	360	0	0	90	98	6.21	23.46
Total for Perennial Grasses		101	138	192	275	50	67	89	110	8.69	8.51
Total for Grasses		101	138	510	635	50	67	179	208	14.90	31.97
F	Agoseris glauca	b28	b32	a5	a2	13	12	3	2	.01	.01
F	Allium spp.	b40	a4	ab14	c92	19	3	8	45	.04	.67
F	Astragalus beckwithii	a4	ab15	c37	bc28	3	8	19	16	.53	.80
F	Astragalus spp.	b34	b24	a-	a-	18	13	-	-	-	-
F	Balsamorhiza sagittata	4	6	11	6	3	4	6	4	1.29	.68
F	Camelina microcarpa (a)	-	-	76	74	-	-	29	31	.19	.81
F	Calochortus nuttallii	-	2	-	5	-	1	-	2	-	.01
F	Chaenactis douglasii	4	2	7	-	2	1	3	-	.01	-
F	Cirsium arvense	5	4	4	-	3	2	2	-	.01	-
F	Collomia linearis (a)	-	-	b46	a8	-	-	25	3	.15	.01
F	Comandra pallida	a7	a6	b29	b36	2	2	11	18	.55	.50
F	Collinsia parviflora (a)	-	-	179	156	-	-	67	56	.93	1.30
F	Crepis acuminata	a2	b33	b17	ab11	2	14	11	6	.35	.31
F	Cryptantha spp.	-	-	13	-	-	-	8	-	.04	-
F	Draba spp. (a)	-	-	-	2	-	-	-	1	-	.00
F	Galium aparine (a)	-	-	8	-	-	-	4	-	.04	-

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	Gayophytum ramosissimum (a)	-	-	_a 1	_b 51	-	-	1	19	.03	.67
F	Gilia spp. (a)	-	-	-	11	-	-	-	3	-	.01
F	Hackelia patens	_{ab} 19	_b 27	_a 8	_a 1	9	15	4	1	.04	.00
F	Lappula occidentalis (a)	-	-	-	2	-	-	-	2	-	.01
F	Lactuca serriola	2	-	-	-	1	-	-	-	-	-
F	Lithospermum ruderales	_a 1	_b 15	_b 15	_{ab} 7	1	8	8	5	1.20	.29
F	Lomatium triternatum	9	13	8	4	5	6	4	3	.04	.01
F	Lupinus argenteus	_{ab} 13	_a 3	_b 23	_{ab} 17	6	2	11	8	1.33	1.46
F	Lygodesmia spinosa	_a 29	_b 47	_{ab} 37	_a 19	17	26	18	10	.66	.55
F	Machaeranthera spp	_a -	_a -	_b 13	_a -	-	-	5	-	.02	-
F	Microsteris gracilis (a)	-	-	_a -	_b 32	-	-	-	17	-	.47
F	Oenothera caespitosa	2	2	2	-	1	2	1	-	.03	-
F	Penstemon speciosus	-	1	-	-	-	1	-	-	-	-
F	Phlox longifolia	_a 60	_{ab} 89	_b 100	_b 103	28	42	48	47	.51	.80
F	Ranunculus testiculatus (a)	-	-	7	13	-	-	3	4	.01	.02
F	Tragopogon dubius	1	5	5	2	1	3	3	2	.04	.01
F	Veronica biloba (a)	-	-	21	20	-	-	8	6	.06	.05
Total for Annual Forbs		0	0	338	369	0	0	137	142	1.43	3.39
Total for Perennial Forbs		264	330	348	333	134	165	173	169	6.75	6.12
Total for Forbs		264	330	686	702	134	165	310	311	8.19	9.51

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 01 , Study no: 4

Type	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Artemisia tridentata vaseyana	70	65	13.18	16.61
B	Chrysothamnus nauseosus consimilis	7	7	.79	.96
B	Chrysothamnus viscidiflorus viscidiflorus	77	72	10.39	5.98
B	Juniperus osteosperma	3	6	.01	.33
B	Opuntia spp.	12	8	.03	.56
B	Purshia tridentata	28	25	3.91	6.42
B	Symphoricarpos oreophilus	5	10	.07	1.43
Total for Browse		202	193	28.41	32.32

CANOPY COVER --

Herd unit 01 , Study no: 4

Point-Quarter Tree Data

Species	Percent Cover		Trees per Acre		Average diameter (in)	
	'96	'01	'96	'01	'96	'01
Juniperus osteosperma	-	1	28	76	3.9	2.6

BASIC COVER --

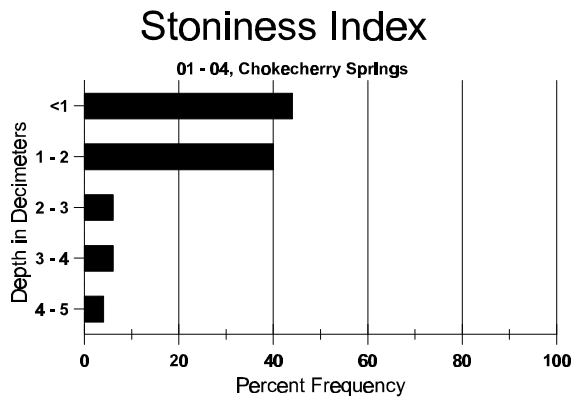
Herd unit 01 , Study no: 4

Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	366	386	1.75	11.50	46.40	62.06
Rock	216	115	8.25	9.75	6.39	4.69
Pavement	242	190	14.75	16.50	6.14	4.69
Litter	397	359	58.50	45.25	55.46	44.56
Cryptogams	11	4	0	0	.05	.06
Bare Ground	187	152	16.75	17.00	7.03	7.97

SOIL ANALYSIS DATA --

Herd Unit 01, Study no: 04, Chokecherry Springs

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
15.8	60.6 (16.9)	7.7	41.7	29.0	29.3	2.5	5.9	201.6	.5



PELLET GROUP FREQUENCY --

Herd unit 01 , Study no: 4

Type	Quadrat Frequency	
	'96	'01
Rabbit	5	1
Deer	11	14
Cattle	3	1

Pellet Transect	
Pellet Groups per Acre 01	Days Use per Acre (ha) 01
17	N/A
461	35 (88)
35	3 (7)

BROWSE CHARACTERISTICS --

Herd unit 01 , Study no: 4

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	84	5	-	-	-	-	-	-	-	-	5	-	-	-	333		5	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	9	-	-	-	-	-	-	-	-	9	-	-	-	180		9	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	24	3	-	-	-	-	-	-	-	27	-	-	-	1800		27	
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4	
	96	16	1	-	-	-	-	-	-	-	17	-	-	-	340		17	
	01	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
M	84	7	10	3	-	-	-	-	-	-	20	-	-	-	1333	34 36	20	
	90	32	4	-	-	-	-	-	-	-	36	-	-	-	2400	19 25	36	
	96	84	7	-	1	-	-	-	-	-	88	2	2	-	1840	20 32	92	
	01	91	2	-	1	-	-	-	-	-	94	-	-	-	1880	22 33	94	
D	84	-	5	8	-	-	-	-	-	-	10	-	3	-	866		13	
	90	10	-	1	-	-	-	-	-	-	4	-	2	5	733		11	
	96	28	6	2	3	-	-	-	-	-	18	-	-	21	780		39	
	01	26	-	-	1	-	-	-	-	-	22	-	-	5	540		27	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	980		49	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	840		42	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		30%			18%			05%			-15%							
'90		08%			02%			14%			-13%							
'96		09%			01%			16%			-15%							
'01		02%			00%			04%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	3999	Dec:	22%			
												'90	3399		22%			
												'96	2960		26%			
												'01	2520		21%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total	
		1	2	3	4	5	6	7	8	9	1	2	3	4					
Chrysothamnus nauseosus consimilis																			
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	01	4	-	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	96	5	-	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
	01	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	96	3	-	-	-	-	-	-	-	-	-	3	-	-	-	60	26	36	3
	01	2	2	-	1	-	-	-	-	-	-	5	-	-	-	100	26	26	5
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	96	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'84		00%			00%			00%											
'90		00%			00%			00%											
'96		00%			00%			00%											
'01		25%			00%			00%			-20%								
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	0%				
												'90	0		0%				
												'96	200		20%				
												'01	160		13%				

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
Y	84	9	1	-	-	-	-	-	-	-	10	-	-	-	666		10	
	90	8	-	-	-	-	-	-	-	-	8	-	-	-	533		8	
	96	6	2	-	2	-	-	-	-	-	9	-	1	-	200		10	
	01	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
M	84	26	11	-	-	-	-	-	-	-	37	-	-	-	2466	28 32	37	
	90	21	2	-	1	-	-	-	-	-	22	1	-	1	1600	15 16	24	
	96	145	10	-	12	-	-	-	-	-	167	-	-	-	3340	14 24	167	
	01	109	3	-	14	-	-	-	-	-	126	-	-	-	2520	11 18	126	
D	84	12	-	-	-	-	-	-	-	-	12	-	-	-	800		12	
	90	16	1	-	1	-	-	-	-	-	16	-	-	2	1200		18	
	96	3	1	1	1	-	-	-	-	-	4	-	-	2	120		6	
	01	17	1	-	1	-	-	-	-	-	14	-	-	5	380		19	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'84			20%			00%			-15%							
		'90			06%			00%			+ 9%							
		'96			07%			.54%			-18%							
		'01			03%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	3932	Dec:	20%			
												'90	3333		36%			
												'96	3660		3%			
												'01	3000		13%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Juniperus osteosperma																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	1	-	-	-	-	-	-	1	-	-	66		1	
	96	-	-	-	2	-	-	-	-	-	-	2	-	-	40		2	
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
Y	84	1	-	-	-	-	-	-	-	-	-	1	-	-	66		1	
	90	1	-	-	-	-	-	-	-	-	-	1	-	-	66		1	
	96	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2	
	01	4	-	-	1	-	-	1	-	-	-	6	-	-	120		6	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	1	-	-	-	-	-	-	-	-	-	1	-	-	20	-	1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+ 0%							
'90		00%			00%			00%			- 9%							
'96		00%			00%			00%			+50%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	66	Dec:	-			
												'90	66		-			
												'96	60		-			
												'01	120		-			
Opuntia spp.																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	3	-	-	-	-	-	-	-	-	-	3	-	-	200	6	5	
	90	3	-	-	-	-	-	-	-	-	-	3	-	-	200	8	17	
	96	13	-	-	-	-	-	-	-	-	-	13	-	-	260	5	15	
	01	9	-	-	-	-	-	-	-	-	-	9	-	-	180	5	10	
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	1	-	-	-	-	-	-	1	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+ 0%							
'90		00%			00%			00%			+33%							
'96		00%			00%			00%			-40%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	200	Dec:	0%			
												'90	200		0%			
												'96	300		7%			
												'01	180		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
Y	84	2	1	2	-	-	-	-	-	-	4	-	1	-	333		5	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	2	1	-	1	-	-	-	-	-	4	-	-	-	80		4	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	1	-	-	-	-	-	-	1	-	-	-	66	15	1	
	96	18	11	1	2	1	-	-	-	-	33	-	-	-	660	27	33	
	01	17	15	2	1	2	-	-	-	-	37	-	-	-	740	33	37	
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	1	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	1	-	-	-	1	-	-	-	2	-	-	-	40		2	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'84			20%			40%			20%			-60%				
		'90			50%			50%			00%			+82%				
		'96			35%			03%			00%			+ 8%				
		'01			45%			08%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'84	333	Dec:	0%			
												'90	132		50%			
												'96	740		0%			
												'01	800		5%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
Y	84	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	1	1	-	-	-	-	-	-	2	-	-	-	40		2	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	1	1	-	-	-	-	-	-	-	2	-	-	-	133	26	65	2
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	200	17	52	3
	96	2	1	-	1	-	-	-	-	-	4	-	-	-	80	21	47	4
	01	12	-	-	1	-	-	-	-	-	13	-	-	-	260	21	49	13
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	1	-	-	-	-	-	-	-	-	-	-	1	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		25%			00%			00%			+20%							
'90		00%			00%			20%			-64%							
'96		33%			17%			00%			+54%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	266	Dec:	0%			
												'90	332		20%			
												'96	120		0%			
												'01	260		0%			